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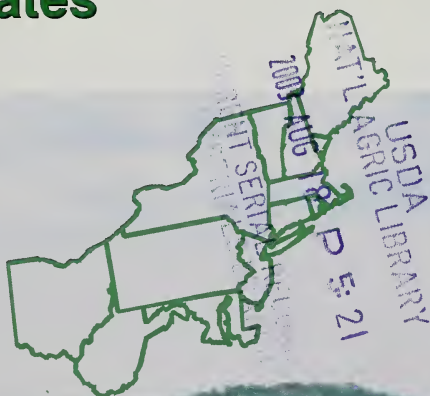


Forest Inventory and Analysis

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Tracking the Diverse and Dynamic Forests in the Northeastern States



United States
Department of
Agriculture

PREPARED BY
Forest Service
Radnor, PA

Northeastern Forest
Experiment Station
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Forests cover 60% of the land in 13 Northeastern States.

- They support more than 370,000 jobs.
- They are the region's largest air and water purifiers.
- They provide outdoor recreation to millions of people.
- They are the source of paper, furniture, and dozens of other wood products.
- They are home to many species of wildlife and plants.



Unlike coal, oil, gas and many other natural resources, forests are renewable. With scientific management and protection, they can be sustained to meet our needs and those of future generations. Forests are so important to our well being that Congress has passed a series of laws to make certain that we have the information necessary to determine how to maintain them for the future. In summary, those laws require the United States Department of Agriculture to inventory and assess the nation's forest resources. The USDA Forest Service accomplishes that mission through periodic forest inventories conducted by Forest Inventory and Analysis (FIA) Units located at regional research experiment stations.

Who Keeps Track of the Forests?

- What do the forests look like?
- Who owns the forests and how are they used?
- What is happening to the forests; how are they changing?

Finding answers to those and many more questions about the 93 million acres of forest within the 13 states shown on the map is the mission of the FIA Unit of the Northeastern Forest Experiment Station headquartered in Radnor, Pennsylvania.

The FIA Unit at Radnor employs more than 50 professionals, scientists, and technical support specialists. They are responsible for designing inventories and related research studies, for collecting data, compiling statistics and for explaining changes or trends in the extent, use and condition of the forests.

Cooperation-Partnerships-Collaboration

While FIA must provide information for national assessments, the mission also calls for cooperation with other Forest Service Units, federal and state agencies, universities and private associations to address regional, state, and county forest-related issues. The State Foresters and the Northeastern Area State and Private Forestry Branch of the USDA Forest Service are FIA's principal partners in all inventories in the northeast.

Depending on a state's information needs and available cooperation, each inventory may be customized to provide more detailed information and precise statistics.

How Are Inventories Made?

FIA's inventories are based on data collected from aerial photography, field plots, and data provided by cooperators.

It would be too costly to count every tree and measure every item of interest about a forest. Scientific sampling allows FIA to develop statistically valid estimates of forest conditions from a small sample of the total forest. But small samples may still be large numbers. For example, the most recent inventory of New York State required nearly 90,000 observations on aerial photos. Field plots were installed on only a small fraction of one percent of New York's land area, but that still required more than 5,400 field plots.



At the time of each inventory, all manufacturers of primary forest products in the state are asked to provide information about the source of wood they use, the amount of wood they use, the kinds and amounts of products they make and the amount of



wood residues (unused portion of the wood they started with) they produce. FIA also conducts a wood utilization study in each state. Those studies provide a means of correlating estimates from field plots with actual harvest data.

FIA attempts to inventory all forest land, whether publicly or privately owned. Owner permission is sought prior to field plot visits. When the necessary cooperation is available, studies of landowner attitudes and objectives are made by sending detailed questionnaires to the owners of field plot locations. Ownership data is combined so that information about individual landowners is confidential. To avoid any management bias that might result if field plot locations were obvious, those locations are released only if landowners agree, and only after FIA has the necessary assurances that the integrity of the plots will not be compromised.

More than 75 different kinds of measurements and estimates may be needed on each field plot, and it takes a two-person crew about 1 day to collect the data. Records are made of land use, forest type, stand size, stand origin, stand age, site class, slope, aspect, soil profile, and water present. For trees, observations are made of species, diameter, height, damage from natural causes and human activities, and suitability for wood products. Data are recorded for shrubs, vines, other understory vegetation, browse, dead trees, snags, and wildlife habitat. Other physical, biological, and social data are extracted from various data bases and merged with plot files. Remeasurement of these variables at later inventories provides the basis for estimating changes and trends.

New technology is being used to produce more information for a wider range of user needs in a more timely manner. Examples include powerful electronic data recorders, new laser-based measuring devices, global positioning systems, imagery from satellites and other remote sensing platforms, geographic information systems, spatial statistics, and mathematical modeling techniques.

What Information is Available?

FIA produces standardized statewide reports, special analyses and reports on timber products, forest ownership, forest biomass, wildlife habitat, and ecosystem related issues. Results of this research are also published in a variety of scientific journals and natural resource periodicals. The staff responds to a large number of requests for special summaries. In the future, much more of the analyses will be done with FIA's partners.



FIA data and reports are available in print and on computer tapes and disks. User-friendly data bases that allow users to generate their own statistical tables are available on CD-Rom and on the Internet. Except for sensitive information about individual landowners, business firms, and the exact location of field plots, FIA's data and products are available to the public free of charge. Customers may be required to pay for special mailing and duplication services, and for some special data retrievals.

Your State Forester may have additional information.

The 10 most common trees, 5 inches in diameter and larger, in the northeastern states, at time of latest inventory.

State	Year	1	2	3	4	5	6	7	8	9	10
Connecticut	1985	red maple	northern red oak	sweet birch	eastern hemlock	white oak	white ash	black oak	white pine	sugar maple	scarlet oak
Delaware	1986	red maple	loblolly pine	sweetgum	white oak	blackgum	Virginia pine	southern red oak	black cherry	American holly	water oak
Maine	1995	balsam fir	red maple	red spruce	northern white-cedar	paper birch	American beech	sugar maple	eastern hemlock	white pine	yellow birch
Maryland	1986	red maple	loblolly pine	white oak	sweetgum	Virginia pine	yellow-poplar	chestnut oak	blackgum	northern red oak	American beech
Massachusetts	1985	red maple	white pine	northern red oak	eastern hemlock	black oak	white oak	sugar maple	scarlet oak	sweet birch	black cherry
New Hampshire	1983	red maple	white pine	balsam fir	red spruce	paper birch	eastern hemlock	sugar maple	northern red oak	yellow birch	American beech
New Jersey	1987	pitch pine	red maple	white oak	Atlantic white-cedar	black oak	sweetgum	white ash	scarlet oak	chestnut oak	blackgum
New York	1993	red maple	sugar maple	eastern hemlock	American beech	white ash	white pine	black cherry	northern red oak	quaking aspen	yellow birch
Ohio	1991	red maple	sugar maple	white ash	hickory	black cherry	American elm	yellow-poplar	white oak	northern red oak	sassafras
Pennsylvania	1989	red maple	sugar maple	black cherry	chestnut oak	northern red oak	eastern hemlock	sweet birch	white oak	American beech	white ash
Rhode Island	1985	red maple	scarlet oak	northern red oak	white oak	black oak	white pine	white ash	yellow birch	pitch pine	sweet birch
Vermont	1983	sugar maple	red maple	eastern hemlock	red spruce	yellow birch	balsam fir	paper birch	American beech	white pine	white ash
West Virginia	1989	red maple	chestnut oak	yellow-poplar	white oak	hickory	sugar maple	northern red oak	American beech	black oak	Virginia pine



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How Reliable is the Information?

FIA maintains a quality assurance/quality control program to monitor compliance with established standards and procedures. Some items of interest (variables) such as tree diameter can be measured precisely. Other variables, such as tree defect must be estimated. Data provided by cooperators is examined for completeness. All inventory results are considered to be preliminary information until they have been subjected to administrative review within the NE Station and to technical reviews by outside experts.

Other Research in Progress

Examples of other research the FIA Unit is conducting or collaborating on are designed to:


- better define urban forest and forest fragmentation
- develop techniques to improve the accuracy and precision of estimates
- utilize remote sensing and other sampling formats to obtain mid-cycle or other interim inventories
- address issues of forest health, sustainability, and forest diversity



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or
contact your State Forester at:

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